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C-A OPERATIONS PROCEDURES MANUAL

4.17 Procedure to Replace High Current Electric Strike Micro-Switches with Low Current (.1 amp) Gold Contact Switches

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Hand Processed Changes

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Collider-Accelerator Department Chairman Date

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4.17 Procedure to Replace High Current Electric Strike Micro-Switches with Low Current (.1 amp) Gold Contact Switches

1. Purpose

This procedure details the required sequence to replace the contacts in the C-A Access Control System electric strikes, installed in security doors and gates. These strikes, when energized, permit entry through the gate that they are installed in. All Collider electric strikes should have low current (.1 amp) internal contacts NOT the high current contacts (10 amps).

1.1 Definitions

- 1.1.1 Electric Strike – A solenoid activated device that allows an individual to gain entry into a gate or door upon power being applied to the device.

2. Responsibilities

- 2.1 The Radiation Safety Committee (RSC) Chair, or designee, approves all changes to the C-A Access Control System (ACS). ([C-A-OPM 4.92](#))
- 2.2 Bypasses of interlocks require the additional approval of a second knowledgeable member of the RSC, a [liaison physicist](#), or the Department ES&H Representative. ([C-A-OPM 4.92](#))
- 2.3 The ACS Cognizant Engineer (ACSCE), shall ensure that all logic diagrams, wiring diagrams, procedures and other Access Control System (ACS) documentation meet the requirements set forth in BNL ES&H Standards for radiation protection interlocks.

3. Prerequisites

- 3.1 Each member of the ACS team shall be trained, and successfully tested on Access Security System procedures in Chapter 4 of the [C-A OPM](#).

4. Precautions

- 4.1 Proper Lockout/Tagout (LOTO) procedures as defined in BNL ES&H Standard 1.5.1 and [C-A-OPM 9.1.16](#) shall be followed.
- 4.2 The ACS is declared a “critical” system (see [C-A OPM 1.1](#)) and, therefore, may be “worked hot” by qualified members of the ACS team.

5. Procedure

- 5.1 Identify and label the two pairs of wires attached to the two contacts on the existing switch.

- 5.2 Proceed to disconnect the 4 wires from the existing switches label each wire.
- 5.3 Disconnect the two wires attached to the coil. label each wire.
- 5.4 Remove the electric strike from the door or gate.
- 5.5 Remove the cover of the electric strike to reveal the 2 micro-switches inside.
- 5.6 Proceed to remove the 2 existing micro switches.
- 5.7 Replace the two old switches with the new #63 (.1 amp gold contacts) switches.
- 5.8 Adjust (if necessary) to trip at the top of throw.
- 5.9 Replace cover on electric strike.
- 5.10 Reinstall the electric strike into the door or gate.
- 5.11 Reconnect wires to both contacts. Make sure the similar color wires stay together as pairs on the same contact.
- 5.12 Reconnect the coil wires.
- 5.13 Installation is now complete.
- 5.14 Test operation of the electric strike by using blue card or S key, verify functioning of strike switches.

6. Documentation

- 6.1 Log change and request drawing shall be changed by (ACSCE).

7. References

- 7.1 Cherry Switch catalog - subminiature E63-00k series.
- 7.2 [C-A-OPM 1.1 "Authorization"](#)
- 7.3 [C-A-OPM 4.92 "Control of Temporary Hardware Changes/Bypasses in the Particle Accelerator Safety System \(PASS\) and the Access Control System \(ACS\)"](#)
- 7.4 [C-A-OPM 9.1.16 "Lockout/Tagout for Radiation Safety \(RS LOTO\)"](#)

8. Attachments

- 8.1 None